



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 25

[IB Docket No. 13-213; FCC 13-147]

Proposal to Enable Operation of a Terrestrial Broadband Network in Certain Mobile Satellite Service Spectrum

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Federal Communications Commission (Commission) proposed to modify its rules for operation of the Ancillary Terrestrial Component (ATC) of the single Mobile-Satellite Service (MSS) system operating in the 2483.5-2495 MHz band. The proposed rule changes would allow the MSS operator to deploy a low-power terrestrial broadband network that would operate in both Globalstar's licensed spectrum at 2483.5-2495 GHz, and, with the same equipment, spectrum in the adjacent 2473-2483.5 MHz band used by unlicensed devices. This action could potentially increase the amount of spectrum available for broadband access in the United States. The Commission seeks comment on the potential impacts this proposal could have on unlicensed devices, which operate in the 2400-2483.5 MHz band, licensed Broadcast Auxiliary Service (BAS) stations, which operate in the 2483.5-2500 MHz band, and licensed Broadband Radio Service/Educational Broadband Service (BRS/EBS) stations, which operate in the 2496-2690 MHz band, along with the costs and benefits of the proposed approach.

DATES: Comments are due on or before **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]** and reply comments are due on or before **[INSERT DATE 105 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL**

REGISTER]. Written comments on the proposed information collection requirements, subject to the Paperwork Reduction Act (PRA) of 1995, Pub. L. 104-13, should be submitted on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: You may submit comments, identified by IB Docket No. 13-213, by any of the following methods:

- Federal Communications Commission's Web Site: <http://fjallfoss.fcc.gov/ecfs2/>. Follow the instructions for submitting comments.
- People with Disabilities: Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Lynne Montgomery at 202-418-2229, Satellite Division, International Bureau, Federal Communications Commission, Washington DC 20554. For additional information concerning the PRA information collection requirements contained in this document, contact Cathy Williams, Federal Communications Commission, at (202) 418-2918, or via e-mail Cathy.Williams@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rulemaking (NPRM) in IB Docket No. 13-213, adopted November 1, 2013 and released on November 1, 2013. The full text of this document is available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY-A257, Washington, DC 20554. This document may also be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., Portals

II, 445 12th Street, SW., Room CY-B402, Washington, DC 20554, telephone 202-488-5300, facsimile 202-488-5563, or via email at FCC@BCPIWEB.com. It is also available via the Internet in the Commission's Electronic Document System (EDOCS) at <http://www.fcc.gov/documents> under IB Docket No. 13-213.

To view a copy of this information collection request (ICR) submitted to OMB: (1) go to the web page <http://www.reginfo.gov/public/do/PRAMain>, (2) look for the section of the Web page called "Currently Under Review," (3) click on the downward-pointing arrow in the "Select Agency" box below the "Currently Under Review" heading, (4) select "Federal Communications Commission" from the list of agencies presented in the "Select Agency" box, (5) click the "Submit" button to the right of the "Select Agency" box, (6) when the list of FCC ICRs currently under review appears, look for the Title of this ICR and then click on the ICR Reference Number. A copy of the FCC submission to OMB will be displayed.

Pursuant to 47 CFR 1.1200 *et seq.*, this matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substances of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. Other rules pertaining to oral and written *ex parte* presentations in permit-but-disclose proceedings are set forth in 47 CFR 1.1206 (b).

INITIAL PAPERWORK REDUCTION ACT OF 1995 ANALYSIS

This document contains proposed information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law

104-13. Public and agency comments are due **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and (e) way to further reduce the information collection burden on small business concerns with fewer than 25 employees. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

OMB Control Number: 3060-0994.

Title: Flexibility for Delivery of Communications By Mobile Satellite Service Providers in the 2 GHz Band, the L Band, and the 1.6/2.4 GHz Band

Form No.: Not applicable.

Type of Review: Revision of an Existing Collection.

Respondents: Business or other for-profit.

Number of Respondents and Responses: 124 respondents; 124 responses.

Estimated Time Per Response: 0.50 – 50 hours per response.

Frequency of Response: On occasion reporting requirement; one time and annual reporting requirements; third party disclosure and recordkeeping requirements.

Obligation to Respond: Required to obtain or retain benefits. The statutory authority for these proposed information collections is found at sections is contained in the 47 U.S.C. 154(i), 157, 302, 303(c), 303(e), 303(f), and 303(r).

Total Annual Burden: 517 hours.

Total Annual Costs: \$511,440

Nature and Extent of Confidentiality: There is no need for confidentiality with this collection of information.

Privacy Act Impact Assessment: No impact(s).

Needs and Uses:

The purposes of the existing information collection is to obtain information necessary for licensing operators of Mobile-Satellite Service (MSS) networks to provide ancillary services in the U.S. via terrestrial base stations (Ancillary Terrestrial Components, or ATCs); obtain the legal and technical information required to facilitate the integration of ATCs into MSS networks in the L-Band and the 1.6/2.4 GHz Bands; and to ensure that ATC licensees meet the Commission's legal and technical requirements to develop and maintain their MSS networks and operate their ATC systems without causing harmful interference to other radio systems.

The purpose of the proposed revision would be to remove a portion of the information collection with respect to a low power broadband network, as proposed in document FCC 13-147. These proposed revisions would enable provision of low-power ATC using licensed spectrum at 2483.5-2495 MHz and spectrum in the adjacent 2473-2483.5 MHz band.

The proposed revision would provide an exception for low-power ATC from the requirements contained in § 25.149(b) of the Commission's rules. These rules require detailed showings concerning satellite system coverage and replacement satellites. The proposed rules would also provide an exception from a rule requiring integrated service, for example service to handsets

capable of operation with both satellites and terrestrial base stations. In this sense, the provider of low-power ATC would be relieved from certain burdens that are currently in place in the existing information collection. We also propose revising this information collection to reflect the elimination of the elements of this information collection for 2 GHz MSS. See 78 FR 48621, August 9, 2013.

SYNOPSIS

Introduction

1. In response to a petition for rulemaking filed by MSS operator Globalstar, the Commission proposes modified rules for operation in the 2483.5-2495 MHz band. Globalstar is the operator of the single MSS system operating in that band. The current rules specify the licensing and operating conditions for terrestrial base stations and mobile terminals licensed to the operator of an MSS system for provision of radio communication services offered together with MSS. The Commission proposes rules that would permit Globalstar to provide low-power ATC using its licensed spectrum at 2483.5-2495 MHz under certain limited technical criteria and, with the same equipment, to utilize spectrum in the adjacent 2473-2483.5 MHz band pursuant to the applicable technical rules for unlicensed operations in that band. The Commission seeks comment on this possible deployment of broadband access equipment, on whether it is thereby possible to enable more efficient use of spectrum in the 2483.5-2495 MHz band and the adjacent 2473-2483.5 MHz band and to increase the amount of spectrum available for broadband access in the United States. However, significant concerns have been raised about potential detrimental impacts on licensed services that operate in the 2483.5-2500 MHz and 2496-2690 MHz bands and unlicensed devices that operate in the 2400-2483.5 MHz band. The Commission seeks comment on the costs and benefits of the proposed approach, and on changes to its rules which may facilitate such deployment and minimize any negative impacts on licensed

services that operate in the 2483.5-2500 MHz and 2496-2690 MHz bands and unlicensed devices that operate in the 2400-2483.5 MHz band.

2. Globalstar also requested that the Commission initiate a rulemaking to permit it to deploy a higher power terrestrial service using LTE technology in both the S band (2483.5-2495 MHz) and L band (1610-1617.775 MHz) over the longer term. The Commission will address Globalstar's L-band proposal separately from this proceeding, although it reserves the right, should it find it appropriate, to consolidate this proceeding with any proceeding addressing Globalstar's L-band proposal and a petition for rulemaking filed by Iridium Constellation LLC regarding L-band MSS frequencies (1610-1626.5 MHz).

PROPOSED RULES

A. Part 25 Rule Proposals

3. The Commission concludes that Globalstar's proposal to deploy a low-power terrestrial system in the 2473-2495 MHz band should be examined to determine whether it is possible to increase the use of this spectrum terrestrially in the near term for its subscribers, without causing harmful interference to other users of this band and adjacent bands, and without compromising Globalstar's ability to provide substantial MSS to the public under its existing MSS authorization. If supported by the record, adoption of Globalstar's proposals could potentially increase the usefulness for terrestrial mobile broadband purposes of 11.5 megahertz of licensed spectrum. As a result, these changes may induce increased investment and innovation throughout the industry and ultimately improve competition and consumer choice. Therefore, the Commission proposes to make the changes to part 25 of the rules necessary to provide for the operation of low-power ATC in the licensed MSS spectrum in the 2483.5-2495 MHz band. Specifically, the Commission seeks comment on its proposal to add technical and operational provisions to part 25 to align with uses that are compatible with part 15 uses. Part 15

of the Commission's rules governs the operation of low-power radiofrequency devices in the 2400-2483.5 MHz band without an individual license from the Commission. Significant concerns have been raised in response to Globalstar's petition about the potential for harmful interference to licensed BAS stations that operate in the 2483.5-2500 MHz band and BRS/EBS stations that operate in the 2496-2690 MHz band. In addition, concerns have been raised about the potential detrimental impact on unlicensed devices that operate in the 2400-2483.5 MHz band, such as Bluetooth and Wi-Fi devices, that are currently used extensively for various wireless broadband services and applications. The Commission specifically seeks further information and supporting detailed technical analyses regarding concerns with any potential detrimental impact on existing unlicensed devices that operate in the 2400-2483.5 MHz band. The Commission also seeks comment on the results of Globalstar's testing of its proposed low-power terrestrial broadband network.

4. The Commission also tentatively concludes that, due to the proposed managed deployment of this equipment in a unique radiofrequency environment involving both unlicensed and licensed operations, the proposed operations are ancillary to Globalstar's licensed MSS operations and are thus appropriately considered for licensing as ATC. Globalstar has stated that, "unlike public 802.11 applications, [its] access points will be carefully controlled by a Network Operating System ("NOS"), [which] will be analogous to that currently deployed by CMRS operators to manage pico- and femto-cellular infrastructure." According to Globalstar, the NOS will also create a rapid means of specifically identifying and controlling potential interference. In adopting ATC rules in the 2003 ATC Report and Order (ATC R&O), which included provisions for licensing ATC operators in the 2483.5-2495 MHz band, the Commission found that there were spectrum efficiency benefits to "dynamic allocation" of frequency use and that those benefits can only be realized by having one licensee control both the MSS and

terrestrial rights in bands allocated for MSS. 18 FCC Rcd 1962, 2071-72 (2003), 68 FR 49372, August 18, 2003. Globalstar's proposed NOS-based approach appears to offer benefits consistent with those identified in the ATC R&O, particularly given the potential benefits to spectrum efficiency in both the licensed MSS band and the adjacent unlicensed band. Although Globalstar's proposed operations differ in some respects from the types of operations contemplated in the Commission's original ATC R&O, the Commission seeks comment on whether analogous technical, policy, and legal bases for restricting ATC licensing to the incumbent MSS licensee adopted in the ATC R&O also apply to Globalstar's proposed operations.

B. Overview of Proposed Low-Power Rules

5. The Commission proposes to modify its part 25 rules in order to allow Globalstar to implement its plan of deploying a low-power terrestrial broadband network in its licensed spectrum from 2483.5-2495 MHz and in the adjacent band at 2473-2483.5 MHz used for unlicensed devices. Specifically, it proposes that the part 25 rules will apply to the 2483.5-2495 MHz portion licensed to Globalstar and that a blanket license will cover operations using these frequencies. The Commission does not intend to grant Globalstar any additional or different interference protection rights than those that currently apply to existing unlicensed operations in the 2473-2483.5 MHz band under part 15 or to ATC operations under the part 25 rules, with the exception of the revisions to the ATC rules discussed below. Under this approach, Globalstar would be required to file an application to modify its part 25 license or licenses pursuant to the existing ATC application procedures, and any deployed equipment in the 2473-2495 MHz band would need an equipment certification. The Commission seeks comment on this general approach.

6. Under this approach, Globalstar's managed operations in the 2473-2483.5 MHz band

would not be entitled to interference protection from licensed services, other part 15 devices, or part 18 industrial, scientific, and medical (ISM) devices. Part 15 unlicensed devices are not entitled to interference protection from licensed services or other unlicensed devices. Part 18 of the Commission's rules authorizes unlicensed ISM devices to operate in the 2400-2500 MHz band. ISM equipment generally must avoid causing interference to any authorized radio service, unless the interference occurs in an ISM band. Similarly, Globalstar's low-power ATC operations in the 2483.5-2495 MHz band would not be entitled to interference protection from a number of other authorized operations. Globalstar's operations would also need to protect other licensed services from harmful interference to the extent required under current Commission rules. This approach addresses one of the concerns raised by parties that commented on Globalstar's petition for rulemaking. These parties generally were concerned that Globalstar could obtain superior interference protection status over other authorized users.

7. Unlicensed uses of the 2400-2483.5 MHz band include Wi-Fi and Bluetooth hands-free communication devices, as well as Bluetooth Low Energy technology applications such as medical temperature measurement devices and blood glucose, blood pressure, and heart rate monitors. In commenting on Globalstar's petition for rulemaking, the Wi-Fi Alliance noted that in the United States, Wi-Fi devices effectively use three non-overlapping IEEE 802.11 standard channels in the 2400-2473 MHz band, Channels 1 (2401-2423 MHz), 6 (2426-2448 MHz), and 11 (2451-2473 MHz). The Bluetooth Special Interest Group (SIG) noted that the 2473-2483.5 MHz portion of the part 15 unlicensed band is unused by the majority of Wi-Fi devices in the U.S. because of limitations on unwanted emissions in the 2483.5-2500 MHz band, and is thus somewhat of a "safe haven" for Bluetooth frequency hopping devices. It also noted that since U.S. Wi-Fi devices generally do not operate in the 2473-2483.5 MHz band, this band is relatively "quiet" from a radiofrequency perspective, and thus is particularly useful for its

relatively low-power systems and is “extremely important” to Bluetooth technology and its operations.

8. Several parties have raised concerns about the effect of Globalstar’s proposed low-power terrestrial network on unlicensed operations in and below the 2473-2483.5 MHz band. Bluetooth SIG noted that recent innovations in Bluetooth technology used in connection with health and wellness products may be impacted, and that Globalstar’s operations may affect a channel used to facilitate “discovery” and interconnection of Bluetooth devices with each other. The Wi-Fi Alliance also expressed concerns that Bluetooth devices would face constraints in spectrum above 2473 MHz, which would generally contribute to congestion in the 2400-2483.5 MHz band with other unlicensed devices. In response, Globalstar argued that since Bluetooth devices are frequency-hopping systems that operate on constantly varying 1 megahertz channels throughout the 2400-2483.5 MHz band, and the 2473-2483.5 MHz band segment represents just one small portion of the unlicensed spectrum that is utilized by Bluetooth technology, its proposed low-power network is no more likely to cause harmful interference to a Bluetooth device than already-existing IEEE 802.11-based Wi-Fi operations elsewhere in the 2400-2483.5 MHz band. Globalstar contended that Bluetooth devices and other unlicensed equipment will be able to coexist with its low-power network and continue to operate in the 2473-2483.5 MHz band, without any loss of spectrum for Bluetooth and other existing and future unlicensed technologies.

9. The Commission seeks comment on any costs, in terms of impacts on unlicensed operations both in the 2473-2483.5 MHz band and below 2473 MHz (i.e., in the 2400-2473 MHz band) that might flow from Globalstar’s proposed low-power terrestrial network. To the extent that any party asserts that Globalstar’s low-power network may cause interference or substantially constrain other operations, the Commission encourages the party to submit

technical analyses detailing their concerns, as well as a detailed assessment of any associated costs.

C. Revisions to § 25.149 of the Commission's Rules

1. Mode of Operations

10. Globalstar's proposed low-power ATC operations would require a rule modification to allow operations by end-user equipment in the 2483.5-2495 MHz band, as such operations are not in the "forward-band" mode of operations required by § 25.149(a)(1) of the rules. Because Globalstar's proposed deployment involves end-user equipment, i.e., "the mobile terminals" transmitting in the MSS band allocated for downlink (i.e., (satellite to end-user equipment) transmissions, the end-user equipment would operate in "non-forward-band" mode. Therefore, the Commission proposes to modify this rule to permit low-power ATC operations in the non-forward-band mode, and seeks comment on this proposal.

2. ATC Gating Requirements

11. The Commission's current ATC rules include several prerequisites, or "gating criteria" that MSS operators must meet in order to be allowed to offer ATC. These gating criteria are set forth in § 25.149 of the Commission's rules. To ensure that the ATC is ancillary to the provision of MSS, there is a requirement that MSS operators must provide substantial satellite service to be eligible for ATC authorization. The Commission has defined substantial satellite service as the capability of providing continuous satellite service over the entire geographic area of satellite coverage required in its rules, (47 CFR 25.149(b)(1)), maintenance of spare satellites to expeditiously replace destroyed or degraded satellites, (47 CFR 25.149(b)(2)), and commercial availability of MSS throughout the mandatory coverage area. (47 CFR 25.149(b)(3)). The rules also require that MSS and ATC services be offered on an integrated basis. (47 CFR 25.149(b)(4)).

12. Relieving Globalstar from certain ATC gating criteria for its low-power network may facilitate spectrum use in both the 2483.5-2495 MHz band as well as the adjacent 2473-2483.5 MHz band, and thus could serve the public interest. Therefore, the Commission proposes to create a limited exception from some provisions of the ATC gating criteria in order to streamline the authorization process and to facilitate deployment of Globalstar's proposed low-power broadband network. Specifically, the Commission proposes to modify the gating criteria that require a demonstration that the MSS licensee is offering commercial MSS. Under this proposal, the Commission would provide an exception for low-power ATC from the rules requiring detailed showings concerning satellite system coverage and replacement satellites. In its rulemaking request, Globalstar indicated it is continuing to develop and pursue MSS operations in the portion of the Big LEO spectrum designated for its use, and has recently announced that it has substantially replenished its satellite constellation by completing a launch campaign, at a cost of more than \$1 billion, for 24 new satellites that are now in full commercial service. This substantial capital investment has facilitated re-initiation of voice and other two-way services via MSS satellites. Globalstar continues to be invested in the provision of MSS. Thus, a simplified evidentiary showing may be sufficient to address a fundamental goal of the ATC rules – that the deployment of terrestrial facilities is in fact ancillary to satellite operations. The Commission seeks comment on this approach.

13. The Commission also proposes an exception from the integrated services rule for the proposed low-power deployment. The integrated services rule requires the offering of integrated MSS and ATC, for example, through use of dual-mode handsets that can communicate with both the MSS network and the ATC. It does not appear feasible for Globalstar to meet this requirement with respect to the entire 2473-2495 MHz band because there is no MSS allocation in the 2473-2483.5 MHz band. The ATC rules and the integrated service rule, in particular,

focus on ensuring that ATC remains ancillary to satellite services and does not become a stand-alone terrestrial service. Given the potential enhanced use of the 2473-2495 MHz band, the Commission invites comment on whether relaxation of this requirement would serve the public interest while maintaining the terrestrial service as ancillary to MSS. Under this approach, Globalstar's management and oversight of deployment of low-power terrestrial facilities, while continuing to offer and support its MSS offering, would be the critical factors in determining whether the ATC continues to be ancillary. The Commission seeks comment on this approach.

3. Technical Rules

14. Limits for equipment operating in the 2483.5-2495 MHz band. The Commission proposes that the total transmit power for low-power ATC equipment operating in the 2483.5-2495 MHz band under new proposed § 25.149(c)(4) of the Commission's rules not exceed 1 Watt with a peak equivalent isotropically radiated power (EIRP) of no more than 6 dBW (4 Watts), a minimum 6 dB bandwidth of 500 kilohertz, and a maximum conducted power spectral density (PSD) limit of 8 dBm/3 kHz. This limit is identical to the limit in § 15.247 of the Commission's rules, which specifies limits for unlicensed operation of digitally modulated communications equipment in the 2400-2483.5 MHz band. The Commission believes it is appropriate to apply the same limits with respect to the 2483.5-2495 MHz band, given the nature of these proposed operations, including the use of digital modulation, and the widespread use of these limits in designing part 15 devices. The Commission seeks comment on this proposal.

15. Unwanted emissions below 2473 MHz. In its comments on Globalstar's petition for rulemaking, the Consumer Electronics Association (CEA) asserted that Globalstar's proposed operations on IEEE 802.11 Channel 14 (2473-2495 MHz), immediately adjacent to IEEE 802.11 Channel 11 (2451-2473 MHz), could, without any guard band, result in the loss of use of Channel 11 by Wi-Fi users and contribute to congestion in the remaining Wi-Fi channels below

2473 MHz. The Wireless Internet Service Providers Association (WISPA) also raised this concern. In response, Globalstar asserted that although the two channels are immediately adjacent to one another, a functional IEEE 802.11-based communications link occupies only approximately 18 megahertz of the 22 megahertz of available bandwidth in each of these channels. Globalstar argued that the resulting de facto guard band will minimize harmful interference between Wi-Fi systems and its low-power network. Globalstar further argued that its access points and higher powered terminal devices will be equipped with high selectivity passband filters, which will further segregate Channel 14 operations from those on Channel 11. The Commission seeks comment on these concerns and claims.

16. The Commission also seeks comment on the appropriate limit for unwanted emissions below 2473 MHz resulting from Globalstar's proposed low-power operations at 2473-2495 MHz. One possible limit is specified in § 15.247(d) of the Commission's rules. That rule, applicable to spread spectrum or digital modulation systems operating in the 2400-2483.5 MHz band, specifies that in any 100 kilohertz bandwidth outside the frequency band in which a device is operating, the unwanted emissions shall be at least 20 dB below the fundamental power in the 100 kilohertz bandwidth within the band that contains the highest level of desired power. Unlicensed use of IEEE 802.11 Channel 11 (2451-2473 MHz) is directly adjacent to Channel 14 (2473-2495 MHz) with no guard band between these two channels, and as pointed out by Globalstar, the overwhelming majority of IEEE 802.11 access points operate on non-overlapping Channels 1, 6, and 11. In light of this, the Commission seeks comment on whether the current unwanted emissions limit provided in § 15.247(d) is compatible with systems operating below 2473 MHz. The Commission also seeks comment on an appropriate limit if this limit is not appropriate. Parties proposing such an emission limit should provide technical analyses and/or studies adequate to demonstrate that their proposed limit is appropriate.

17. Applicability of the unwanted emission limit of § 25.254 at the lower edge of the 2483.5-2495 MHz band. Section 25.254 of the Commission's rules specifies an out-of-channel emission limit for ATC base stations operating in the 2483.5-2495 MHz band. This limit was created assuming high-powered operations in the 2483.5-2495 MHz band. The Commission proposes to authorize low-power operations across the lower band edge at 2483.5 MHz. Therefore, the Commission seeks comment on whether it should interpret § 25.254 of the rules as not applying, at the lower edge of the 2483.5-2495 MHz band to the low-power network under consideration in this proceeding. Alternatively, the Commission seeks comment on whether it should provide an explicit exception to § 25.254 of the rules with respect to the lower edge of the 2483.5-2495 GHz band for operations involving a signal emitted from such equipment.

18. Unwanted emissions limits with respect to licensed services operating above 2495 MHz. Section 25.254(d) of the Commission's rules sets out the unwanted emission limits for ATC base stations in the 2483.5-2495 MHz band in order to avoid interference to Broadcast Radio Service (BRS)/Educational Broadband Service (EBS) adjacent channel licensees operating above 2495 MHz. This rule requires that ATC base stations attenuate unwanted emissions above 2495 MHz by a factor of no less than $43 + 10 \log (P)$ dB, where P is the total transmitter power in Watts. 47 CFR 25.254(d)(1). This rule was developed based on high power base station operations. For its low-power ATC equipment, Globalstar proposes to attenuate the unwanted emission above 2495 MHz by a factor no less than $40 + 10 \log (P)$ dB at the channel edge at 2495 MHz, $43 + 10 \log (P)$ dB at 5 megahertz from the channel edges, and $55 + 10 \log (P)$ dB at X megahertz from the channel edges where X is the greater of 6 megahertz or the actual emission bandwidth. This is a relaxation of the current ATC base station unwanted emissions attenuation rule by 3 dB within the first 5 megahertz above 2495 MHz (i.e., 2495-2500 MHz). In its comments on Globalstar's petition for rulemaking, Clearwire Corporation (Clearwire)

argued that Globalstar's proposed power levels, out-of-band emissions, and potential outdoor installations create a high probability for interference to Clearwire's operations above 2496 MHz. The Commission observes, however, that the unwanted emissions limits proposed by Globalstar are similar to those proposed in another proceeding by the Wireless Communications Association International, Inc. (WCAI) and supported by Clearwire for unwanted emissions for its wide bandwidth, low-power mobile devices operating above 2511 MHz. Those wide-bandwidth, low-power mobile devices' operations are similar to the low-power operations proposed by Globalstar. Under § 27.50(h)(2) of the rules, BRS and EBS mobile stations are required to limit their EIRP to 2 Watts. Globalstar proposed to limit the EIRP to 4 Watts for both access points and end-user terminals.

19. Clearwire also argued that Globalstar's proposal lacks mutuality of obligation that fosters an environment of cooperation at the licensees' respective band edges. Under the current rules, BRS/EBS mobile digital stations that operate in the 2496-2690 MHz band are required to limit their unwanted emissions below 2496 MHz by a factor no less than $43 + 10 \log (P)$ dB. 47 CFR 27.53(m)(4). This limit is 3 dB stricter than the limit proposed by Globalstar for its low-power network in the 2496-2500 MHz band. The Commission notes, however, that this stricter limit imposed on BRS/EBS unwanted emissions below 2496 MHz is intended to avoid interference to MSS operations below 2495 MHz, which will continue regardless of whether the rules proposed in this proceeding are adopted. The signal power received from the satellite by an MSS terminal is significantly lower than that received by a BRS terminal. As a result, the potential interference impact of BRS transmissions to an MSS terminal is much higher than that of a low-power ATC transmission into a BRS terminal.

20. The Commission seeks comment on Globalstar's proposed unwanted emissions limits above 2495 MHz and whether these limits would be adequate to avoid interference to licensed

services operating above 2495 MHz. If these limits are not adequate, what are appropriate limit(s) to avoid interference to licensed services operating above 2495 MHz? In addition, § 25.254(d)(6) of the Commission's rules specifies a measurement bandwidth of 1 percent of the 26 dB emission bandwidth for determining ATC base stations' compliance with the § 25.254(d) unwanted emissions limits in the 1 megahertz immediately above and adjacent to 2495 MHz while § 15.247(d) of the Commission's rules specifies a measurement bandwidth of 100 kilohertz for determining § 15.247 devices' compliance with the § 15.247(d) unwanted emissions limit outside the band of operation. 47 CFR 15.247(d), 25.254(d)(6). Although the emissions from Globalstar's proposed operations would include a portion that is subject to the measurement bandwidth requirement in § 15.247(d), the Commission proposes to not apply this measurement bandwidth requirement to unwanted emissions from Globalstar's operations above 2495 MHz and seeks comment on whether to apply a 1 megahertz resolution bandwidth as required in § 25.254(d).

D. Broadcast Auxiliary Service Channels A8-A10

21. Comments in response to Globalstar's rulemaking petition filed by Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) raised a number of long-standing concerns related to BAS operations in the 2450-2500 MHz band. By way of background, there are three BAS channels that are authorized for operation in the 2450-2500 MHz band – A8 (2450-2467 MHz), A9 (2467-2483.5 MHz), and A10 (2483.5-2500 MHz). As of July 25, 1985, the Commission ceased accepting applications for new or modified BAS, part 90, and part 101 microwave stations for the 2483.5-2500 MHz band. Existing licensees in the band have been permitted to continue operating on a 'grandfathered' basis. Our records indicate that there are approximately 599 active BAS licensees operating on Channels A8 and A9, categorized as follows: 58 TV Relay (54 Intercity Relay (ICR) and 4 TV Translator Relay (TTR)), 492 TV

Pickup (TV PU), 17 TV Studio Transmitter Link (TV STL), and 32 Local Television Transmission Service (LTTS). Our records also indicate there are approximately 186 active grandfathered BAS licensees operating on Channel A10, as follows: 5 TV Relay (4 ICR and 1 TTR) and 181 TV PU.

22. The 2483.5-2500 MHz band has a long history of joint uses and, on many occasions, the Commission has determined that additional services could operate in this band, concluding that coordination could be used to prevent the newly integrated services from causing harmful interference to existing services in the band. In the 1994 Big LEO Service Rules Order, which established the licensing and service rules for MSS operations, the Commission affirmed that MSS licensees could coordinate their operations to avoid causing harmful interference to existing operations in the 2483.5-2500 MHz bands and declined to relocate grandfathered operations in this band. In 2003, to enhance MSS licensees' ability to offer mobile services, the Commission adopted the ATC R&O, which, *inter alia*, allowed CDMA MSS licensees in the 2483.5-2500 MHz band to add ATC operations. In that decision, the Commission determined that MSS licensees operating ATC facilities could coordinate their operations prior to construction and operation to avoid causing harmful interference to existing BAS, part 90, and part 101 microwave operations in the 2483.5-2500 MHz band. Consequently, these MSS licensees were not required to relocate incumbent BAS operations in the 2483.5-2500 MHz band. Instead, they were required to coordinate their proposed operations to avoid causing harmful interference to those grandfathered operations in the 2483.5-2500 MHz band, and BAS Channels A8 and A9 stations and parts 90 and 101 mobile and fixed stations in the 2450-2483.5 MHz band.

23. Although the Commission has previously concluded that the other services authorized to use the 2483.5-2500 MHz band could coordinate their operations to avoid causing harmful interference to BAS operations in this band, EIBASS has voiced concerns about the potential for

harmful interference to BAS Channel A10 operations from Globalstar's terrestrial low-power network operating in the 2483.5-2495 MHz band, and has reiterated an interest in "refarming" Channels A8-A10 to resolve long-standing issues with Globalstar and other users in the 2483.5-2500 MHz band, such as BRS/EBS.

24. The Commission seeks comment on Globalstar's ability to effectively coordinate the deployment of its terrestrial low-power network with primary BAS Channel A10 operations in the 2483.5-2500 MHz band. Are there criteria that can be used in deploying low-power network access points that will be effective in avoiding interference to primary BAS operations, and, if so, what are they? Alternatively, is access-point-by-access-point coordination feasible? The Commission seeks input on what specific procedures, rule changes, or policies may be necessary to either continue to protect grandfathered BAS Channel A10 stations from harmful interference or to relocate such stations.

E. Part 15 Rules

25. Section 15.205 of the Commission's rules specifies certain bands in which unlicensed devices are restricted from operation, including the 2483.5-2500 MHz band. The restriction protects MSS operations in that band, and prohibits any emissions in the band by unlicensed operations, other than spurious emissions.

26. Given the unusual circumstances involved here, with Globalstar proposing to transmit a signal that is in part operating under rules for unlicensed operations and in part under rules for licensed operations, the Commission seeks comment on whether it should interpret § 15.205 of the rules to apply to Globalstar's proposed deployment in the 2483.5-2495 MHz band. The rule was not developed with this type of operation in mind and Globalstar's managed deployment of equipment may provide an alternative means of ensuring self-interference protection of MSS operations. We seek comment on, alternatively, providing an explicit exception in § 15.205(d)

of the rules for unlicensed operations involving a signal emitted from low-power ATC equipment.

27. The Wi-Fi Alliance requested in comments concerning Globalstar's rulemaking petition that the Commission consider revising the band-edge restriction and unwanted emissions limits specified in §§ 15.205 and 15.209, respectively, to enable the use of Channels 12 and 13 by Wi-Fi and other unlicensed devices, provided that use does not interfere with Globalstar's licensed low-power ATC operations in the upper portion of Channel 14, i.e., in the 2483.5-2495 MHz band. Globalstar indicated that it does not object to seeking further comment on this issue, but noted that the existing unwanted emissions limits are necessary in order to protect its MSS in the 2483.5-2495 MHz band, and that it is fully committed to maintaining that service. Accordingly, the Commission seeks comment on this issue. Would relaxation of the limits in order to enable use of Channels 12 and 13 degrade MSS capabilities, particularly if those capabilities are not deployed on the same managed basis as Globalstar contemplates for its operations in Channel 14?

F. Equipment Certification

28. A party seeking to market RF devices to the public must first comply with the Commission's equipment authorization procedures, which, inter alia, require a demonstration that the device complies with the Commission's rules. 47 CFR 2.803, 2.901. The Commission proposes to require equipment manufacturers to certify all terrestrial low-power equipment under modified provisions specified in § 25.149 of the rules. The proposed rules would not distinguish between low-power network access points and end user terminals or client devices, and would require certification for all low-power network equipment. Since the equipment will be operating simultaneously under the provisions of § 15.247 and modified provisions specified in § 25.149, we also tentatively conclude that the equipment must be certified under both of the rule

parts. In such cases the device could be treated like a composite device subject to multiple rule parts. Composite devices are required to ensure compliance with the relevant rule parts. The Commission seeks comment on this approach and how compliance should be demonstrated for such devices. The Commission also concludes that the current certification procedures in subpart J of part 2 of the rules permit such approval and seeks comment on this conclusion.

29. A grant of equipment certification specifies the frequency range over which the equipment is approved to operate. A grantee of equipment certification may obtain authorization to add additional frequency bands to a previously approved device by filing a new application for certification and labeling the equipment with a new FCC ID. In some cases, the Commission permits grantees to add new frequency bands to a previously certified device by filing a request for a “permissive change.” If the changes are made through software, the Commission has permitted the grantees to add certain additional frequency bands; however, the Commission does not permit a grantee of certification to add or change the rule part under which a device is certified (e.g., from part 15 to part 25) by filing a request for a permissive change, unless the equipment was originally certified as a software defined radio (SDR). For such a change, the Commission would require the grantee to file a new application for certification and label the equipment with a new FCC ID.

30. Globalstar maintains that Wi-Fi enabled devices can be upgraded through software based modification. The Commission seeks comment on requiring applicants for certification of certain equipment that operates in the 2483.5-2495 MHz band to provide evidence of Globalstar’s consent to the applicant’s request for equipment certification. Specifically, the Commission proposes limiting this requirement to equipment that operates in the 2483.5-2495 MHz band that is used as a network access point and that will operate as a master device as defined in § 15.202 of the Commission’s rules, since the master device in a system controls the

frequencies on which other devices in the system (client or end user terminal devices) can operate. The Commission seeks comment on whether a requirement to obtain Globalstar's consent is unnecessary for the certification of devices that operate exclusively as a client to a master device. Globalstar expects that network access points operating in the 2483.5-2495 MHz band would be new devices. The Commission seeks comment on whether requiring this additional step would place a significant burden on device manufacturers.

31. In the case of client or end user terminal devices that would operate with the master or network access points, Globalstar stated that to expand the operating frequency range of existing devices to include the 2483.5-2495 MHz band, the original grantees of certification for those devices will have to submit permissive change filings describing the proposed modifications. It also stated that it has the ability to control the availability of software updates for end-user devices and will provide the update only to devices certified by the Commission and to end-users authenticated to receive service over Globalstar's facilities. Globalstar further stated that most 802.11-enabled end-user devices have the hardware needed to operate at 2473-2495 MHz, but lack the capability to operate above 2483.5 MHz in the United States because of restrictions in their radio frequency (RF) software.

32. The Commission seeks comment on the capability of existing part 15 devices to be modified through software directly provided by Globalstar to use the 2473-2495 MHz frequency band with the transmission format that Globalstar proposed. In particular, the Commission seeks comment on whether the currently deployed devices have the hardware capability to operate in the additional frequency band with the Globalstar proposed protocol. The Commission also seeks comment on whether existing devices could be modified through over-the-air software changes, or whether changes to the devices' firmware would be necessary. In addition, the Commission seeks comment on the means that Globalstar plans to use to control the availability

of software updates and prevent unauthorized modifications to certified equipment. The Commission further seeks comment on how Globalstar will limit operation of equipment to parties that are authorized to use its spectrum, and on how the Commission would ensure that the modified devices would be compliant with the proposed rules.

33. The Commission does not currently permit grantees or third-parties to modify non-SDR devices to operate under additional rule parts through a permissive change, but instead requires a new grant of certification and a new FCC ID. If the client devices can be modified by over-the-air software upgrades by Globalstar, how should such change be classified under our current rules and which party should be held responsible for compliance of the devices? Globalstar stated that grantees of such devices should file for a permissive change prior to Globalstar software upgrade. Also, if the client devices need firmware modifications which will require a filing of new equipment authorization with the Commission, this may require a large number of filings for permissive changes, if appropriate, or applications for new filings. This may inhibit manufacturers from taking advantage of the proposed rule changes. Thus, the Commission invites comments on the costs and benefits of different approaches to reduce the compliance burden on various parties while providing the assurance that modified devices are compliant with the revised rules. The Commission announced at its June 13, 2012 meeting that it is planning to initiate a proceeding to consider possible changes to the equipment certification procedures, including the permissive change rules. In the interim, the Commission seeks comment on whether, in the interim, more limited changes concerning only the Globalstar proposal would serve the public interest. Should the Commission permit Globalstar, or parties working with Globalstar, to add new frequency bands to previously approved equipment without the need to label equipment with a new FCC ID?

G. Free Access Points and Public Safety Considerations

34. In its Petition, Globalstar committed to “deploying up to twenty thousand [low-power ATC] access points free of charge in the nation’s public and non-profit schools, community colleges and hospitals.” Subsequently, Globalstar noted in an ex parte filing that it fully supports the ConnectED initiative and that “Globalstar’s [low-power ATC] can play an important part in meeting the ambitious objectives of ConnectED.” Further, Globalstar also committed to providing its “mobile satellite service free of charge to Globalstar subscribers within any federally declared “disaster area” following a natural or man-made disaster.” The Commission seeks comment on whether one or both of Globalstar’s commitments should be incorporated as requirements in the Commission’s rules. Alternatively, the Commission invites comment on directing the International Bureau to include one or both of Globalstar’s commitments as license conditions, in the event that the Commission adopts rules as contemplated in this proceeding.

Procedural Matters

A. Regulatory Flexibility Act

35. As required by the Regulatory Flexibility Act, 5 U.S.C. 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) regarding the possible significant economic impact on a substantial number of small entities of the proposals addressed in the Commission’s proposed rules. The IRFA is set forth below. Written public comments are requested on the IRFA.

B. Initial Paperwork Reduction

36. This document contains proposed new information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and OMB to comment on the information collection requirements contained in this document, as required by PRA. In addition, pursuant to the Small Business Paperwork Relief

Act of 2002, the Commission seeks specific comment on how it might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”

C. Ex Parte Rules

37. This proceeding shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s ex parte rules. Persons making ex parte presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral ex parte presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during ex parte meetings are deemed to be written ex parte presentations and must be filed consistent with § 1.1206(b) of the Commission’s rules. In proceedings governed by § 1.49(f) or for which the Commission has made available a method of electronic filing, written ex parte presentations and memoranda summarizing oral ex parte presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s ex parte rules.

D. Filing Requirements

38. Comments and Replies. Pursuant to §§ 1.415 and 1.419 of the Commission's rules, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

39. Availability of Documents. Comments, reply comments, and ex parte submissions will be available for public inspection during regular business hours in the FCC Reference Center, Federal Communications Commission, 445 12th Street, S.W., CY-A257, Washington, D.C., 20554. These documents will also be available via ECFS. Documents will be available electronically in ASCII, Word 97, and/or Adobe Acrobat.

40. People with Disabilities: To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

Initial Regulatory Flexibility Analysis

41. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in IB Docket No. 13-213. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA.

A. Need for, and Objectives of, the Proposed Rules

42. The Commission proposes modified rules for the operation of the Ancillary Terrestrial Component (ATC) of the single Mobile-Satellite Service (MSS) system operating in the 2483.5-2500 MHz frequency band. The proposed changes would allow Globalstar, Inc. (Globalstar) to deploy a low-power broadband network in the Big LEO S band. Under the proposals, Globalstar would be able to provide low-power ATC using its licensed spectrum under certain limited technical criteria, and could utilize spectrum in the adjacent 2473-2483.5 MHz band pursuant to the technical rules for unlicensed operations that apply in that band. The Commission proposes to make changes to relieve Globalstar from certain requirements in part 25

of the rules to provide for the operation of low-power ATC in the licensed MSS spectrum in the 2483.5-2495 MHz band. The Commission also proposes technical rules to prevent unwanted emissions to other services operating in or above or below the 2473-2495 MHz band and seeks comment on preventing interference.

43. The Commission seeks comment on the treatment of the proposed operations under a part 15 rule which specifies certain bands in which unlicensed devices are restricted from operation, and on the application of certain Part 15 equipment certification rules with respect to the proposed Globalstar network. The Commission also seeks comment on procedures for equipment certification and on the procedures that should be followed for modifying the devices that will provide the proposed network.

B. Legal Basis

44. The proposed action is authorized pursuant to sections 1, 2, 4(i), 301, 302, 303, and 324 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 301, 302, 303, and 324.

C. Description and Estimate of the Number of Small Entities to Which Rules Will Apply

45. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act. A small business concern is one that: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). Below, we further describe and estimate the number

of small entity licensees that may be affected by the adopted rules.

Satellite Telecommunications and All Other Telecommunications

46. The rules proposed would affect some providers of satellite telecommunications services, if adopted. Satellite telecommunications service providers include satellite and earth station operators. Since 2007, the SBA has recognized two census categories for satellite telecommunications firms: “Satellite Telecommunications” and “Other Telecommunications.” Under the “Satellite Telecommunications” category, a business is considered small if it had \$30 million or less in average annual receipts. Under the “Other Telecommunications” category, a business is considered small if it had \$30 million or less in average annual receipts.

47. The first category of Satellite Telecommunications “comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.” For this category, Census Bureau data for 2007 show that there were a total of 512 satellite communications firms that operated for the entire year. Of this total, 464 firms had annual receipts of under \$10 million, and 18 firms had receipts of \$10 million to \$24,999,999.

48. The second category of Other Telecommunications is comprised of entities “primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications

connections are also included in this industry.” For this category, Census Bureau data for 2007 show that there were a total of 2,383 firms that operated for the entire year. Of this total, 2,346 firms had annual receipts of under \$25 million. Some of these “Other Telecommunications firms,” which are small entities, are earth station applicants/licensees that might be affected if the proposed rule changes are adopted.

49. The proposed rule changes only impact one Satellite Telecommunications Service Provider, Globalstar, Inc. Globalstar reported \$76.3 million in revenue in 2012. Regarding the use of the frequency bands that are the subject of this rulemaking, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to Satellite Telecommunications. Because the proposed rule amendments affect only Globalstar, which cannot be described as a small entity, and no other satellite telecommunications service providers, the Commission believes that no substantial number of small entities is potentially affected by our actions.

Radio and Television Broadcasting and Wireless Communications Equipment

Manufacturing

50. The proposed rules will pertain to manufacturers of unlicensed communications devices. The appropriate small business size standard is that which the SBA has established for radio and television broadcasting and wireless communications equipment manufacturing. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.” The SBA has developed a small business size standard for firms in this category, which is: all such

firms having 750 or fewer employees. According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for part or all of the entire year. Of this total, 784 had fewer than 500 employees and 155 had more than 100 employees. Thus, under this size standard, the majority of firms can be considered small.

51. The Commission anticipates that the proposed rules will affect equipment manufacturers of unlicensed communications devices, because the proposed rules would apply existing part 15 equipment certification rules to the proposed equipment that would provide low-power ATC service. The Commission proposes to apply the rules in part 15 to both existing equipment as well as new equipment that will be manufactured.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

52. The Commission seeks comment on whether it would be necessary to adopt rule changes that could affect the reporting, recordkeeping, and other compliance requirements for small business equipment manufacturers who would provide the equipment for the contemplated new service.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

53. The RFA requires that, to the extent consistent with the objectives of applicable statutes, the analysis shall discuss significant alternatives such as: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

54. The Commission seeks comment from all interested parties. The Commission recognizes that proposals to require equipment manufacturers to comply with both existing and proposed equipment certification rules may impact small entities. To the extent possible, the Commission seeks to minimize the impact the proposed rule changes would have on small entities and seeks comment on those proposed changes. For devices which will operate on the low-power broadband network proposed, the Commission proposes that the equipment certification rules contained in part 15 of the Commission's rules apply to operations in the 2473-2483.5 MHz band. For operations in the 2483.5-2495 MHz band, the Commission proposed modifications to rules in § 25.149 of the Commission's rules. Since the operations will cover this band and the 2483.5-2495 MHz band, the devices may be treated as composite devices which would be required to comply with the relevant portions of both rule parts.

55. The Commission also suggests limiting a proposed rule, which would require parties seeking certification of equipment to provide evidence of Globalstar's consent to their request for equipment certification, to equipment that is used as a network access point and will operate as a master device. The Commission proposes not imposing this requirement on devices that will serve only as a client to a master device. The Commission seeks comment on whether already manufactured devices can be modified by over-the-air software upgrades or through firmware upgrades and how those modifications should be classified under the rules, as a permissive change or as an application for a new filing. Finally, the Commission seeks comment from parties to ascertain the benefits and costs of different certification approaches to reduce the compliance burden on affected parties.

56. Small entities are encouraged to bring to the Commission's attention any specific concerns they may have with the proposals. The Commission expects to consider the economic impact on small entities, as identified in comments filed, in reaching its final conclusions and

taking action in this proceeding.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

57. None.

CONCLUSION

58. This action could potentially help to meet growing consumer demand for wireless broadband. At the same time, concerns have been raised about certain detrimental impacts on unlicensed devices. The Commission seeks comment on the costs and benefits of the approach proposed and on the changes to our rules, which may facilitate such deployment and minimize any negative impacts to authorized services and unlicensed devices that operate in and/or adjacent to the same bands that Globalstar proposed to use for its low-power terrestrial network.

ORDERING CLAUSES

59. Accordingly, IT IS ORDERED that, pursuant to the authority contained in sections 4(i), 4(j), 7(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 154(j), 157(a), 302(a), 303(c), 303(e), 303(f), 303(g), 303(j), and 303(r), this Notice of Proposed Rulemaking in IB Docket No. 13-147 IS ADOPTED.

60. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this NPRM, including the Initial Regulatory Flexibility Certification, to the Chief Counsel for Advocacy of the Small Business Administration.

61. IT IS FURTHER ORDERED pursuant to sections 4(i) and (j) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), (j), 303(r), and § 1.407 of the Commission's Rules, 47 CFR 1.407, that the Petition for Rulemaking filed by Globalstar, Inc.

on November 13, 2012, IS GRANTED to the extent provided in this NPRM.

List of Subjects in 47 CFR Part 25

Satellites, Telecommunications.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch,
Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR part 25 as follows:

PART 25 – SATELLITE COMMUNICATIONS

1. The authority citation for part 25 continues to read as follows:

Authority: 47 U.S.C. 701-744. Interprets or applies sections 4, 301, 302, 303, 307, 309, 310, and 332, of the Communications Act, as amended, 47 U.S.C. sections 154, 301, 302, 303, 307, 309, 310, and 332 unless otherwise noted.

2. Section 25.149 is amended by
 - a. Revising paragraph (a)(1), the note to paragraph (a)(1), and paragraph (c)(3);
 - b. Adding paragraph (c)(4);
 - c. Revising paragraph (e);
 - d. Redesignating paragraph (g) as (h); and
 - e. Adding new paragraph (g) to read as follows:

§ 25.149 Application requirements for ancillary terrestrial components in the Mobile-Satellite Service networks operating in the 1.5/1.6 GHz, and 1.6/2.4 GHz Mobile-Satellite Service

(a) * * *

(1) ATC shall be deployed in the forward-band mode of operation whereby the ATC mobile terminals transmit in the MSS uplink bands and the ATC base stations transmit in the MSS downlink bands in portions of the 2000-2020 MHz/2180-2200 MHz bands (2 GHz band), the

1626.5-1660.5 MHz/1525-1559 MHz bands (L-band), and the 1610-1626.5 MHz/2483.5-2500 MHz bands (1.6/2.4 GHz).

NOTE TO PARAGRAPH (a)(1): An L-band MSS licensee is permitted to apply for ATC authorization based on a non-forward-band mode of operation provided it is able to demonstrate that the use of a non-forward-band mode of operation would produce no greater potential interference than that produced as a result of implementing the rules of this section. A 1.6/2.4 GHz licensee is permitted to apply for ATC authorization on a non-forward-band mode of operations where the equipment deployed will meet the requirements of paragraph (c)(4) of this section.

* * * * *

(c) * * *

(3) Licensees and manufacturers are subject to the radiofrequency radiation exposure requirements specified in §§ 1.1307(b), 2.1091, and 2.1093 of this chapter, as appropriate. ATC base stations must comply with the requirements specified in § 1.1307(b) of this chapter for PCS base stations. ATC mobile stations must comply with the requirements specified for mobile and portable PCS transmitting devices in § 1.1307(b) of this chapter. ATC mobile terminals must also comply with the requirements in §§ 2.1091 and 2.1093 of this chapter for Satellite Communications Services devices. Applications for equipment authorization of ATC mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(4) Applications for equipment authorization of terrestrial low-power system equipment (access point and end-user devices) operating under this section in the 2483.5-2495 MHz band must demonstrate the following:

(i) The system is digitally modulated;

(ii) The 6 dB bandwidth is at least 500 kHz;

(iii) The maximum transmit power is no more than 1 Watt with a peak EIRP of no more than 6 dBW;

(iv) The maximum power spectral density conducted to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission;

(v) Emissions above 2495 MHz shall be attenuated by a factor of at least $40 + 10 \log (P)$ dB at the channel edge at 2495 MHz, $43 + 10 \log (P)$ dB at 5 MHz from the channel edges, and $55 + 10 \log (P)$ dB at X MHz from the channel edges where X is the greater of 6 MHz or the actual emission bandwidth.

(vi) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately above and adjacent to the 2495 MHz a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. If 1 percent of the emission bandwidth of the fundamental emission is less than 1 MHz, the power measured must be integrated over the required measurement bandwidth of 1 MHz. A resolution bandwidth narrower than 1 MHz is permitted to improve measurement accuracy, provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission

bandwidth of the fundamental emission of a transmitter is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

NOTE TO PARAGRAPH (c)(4): Systems meeting the requirements set forth in this section are deemed to have also met the requirements of § 25.254. No further demonstration is needed for these systems with respect to § 25.254.

* * * * *

(e) Except as provided for in paragraphs (f) and (g) of this section, no application for an ancillary terrestrial component shall be granted until the applicant has demonstrated actual compliance with the provisions of paragraph (b) of this section. Upon receipt of ATC authority, all ATC licensees must ensure continued compliance with this section and § 25.253 or § 25.254, as appropriate.

* * * * *

(g) Special provisions for terrestrial low-power systems in the 2473-2495 MHz band. An operational MSS system that applies for authority to deploy ATC in the 2483.5-2495 MHz band for terrestrial low-power operations satisfying the equipment certification requirements of paragraph (c)(4) of this section is not required to demonstrate compliance with paragraph (b) of this section, except to demonstrate the commercial availability of MSS, without regard to coverage requirements.

* * * * *

[FR Doc. 2014-03618 Filed 02/14/2014 at 4:15 pm; Publication Date: 02/19/2014]